

LEWISTOWN FAA AIRPORT

FERGUS COUNTY

The Lewistown airport is located approximately 4 miles southwest of Lewistown at 47 03 00 N and 109 27 00 W (Site No. 40 on Map II-1). Elevation at the airport is 4,143 feet. Meteorological data have been collected at the airport for many years by the Federal Aviation Administration.

These data, primarily collected for aviation and weather forecasting uses, consist of short-term (5 minutes or less) averages of wind speed and direction, as well as other meteorological parameters. Data were gathered once per hour. The data have been analyzed by Battelle Pacific Northwest Laboratories. Because of a change in reporting interval, the data set was split into two parts for analysis: December 21, 1949, through August 15, 1962; and October 13, 1964, through December 31, 1978. Data from the latter period only were selected for inclusion in the *Montana Wind Energy Atlas*.

The data set for Lewistown consists of summaries of observations made every third hour from October 13, 1964, through December 31, 1978. The anemometer was mounted on a ground mast at a height of 6.1 meters. The site is representative of a limited area within a few miles of Lewistown, since the area is surrounded by mountains.

Average annual wind speed at the airport was 10.1 miles per hour. Average monthly wind speeds ranged from 8.3 miles per hour in July to 11.2 miles per hour in December and January.

Average annual wind power was 109.0 watts/m². Average monthly wind power ranged from 54.0 watts/m² in July to 164.0 watts/m² in January.

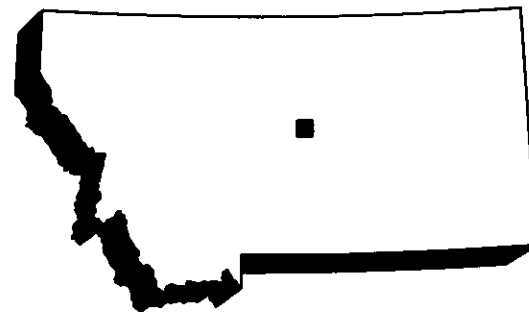


Table IV - 59
Monthly Wind Speed Distribution
FERGUS COUNTY - LEWISTOWN FAA AIRPORT
10/13/64 - 12/31/78

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
CALM (<1.1)	9.5	9.8	8.0	7.7	9.5	9.2	10.6	10.1	9.4	8.3	9.8	9.3	9.3	CALM (<0.5)
1.1- 3.1	0.5	0.4	0.4	0.2	0.2	0.5	0.7	0.2	0.4	0.5	0.4	0.5	0.4	0.5- 1.4
3.4- 5.4	7.2	7.4	6.4	5.9	7.0	8.3	9.6	9.5	8.2	7.8	7.9	6.6	7.7	1.5- 2.4 S
5.6- 7.6	16.5	18.8	18.2	17.4	18.8	22.3	27.1	26.1	25.7	23.2	19.2	17.0	20.8	2.5- 3.4 P
7.8- 9.8	14.0	13.3	14.5	16.0	16.6	19.8	19.7	19.9	18.8	15.5	15.2	14.1	16.5	3.5- 4.4 E
10.1-12.1	13.5	11.7	14.6	16.0	14.9	14.6	14.4	14.2	13.7	14.2	13.5	13.5	14.1	4.5- 5.4 E
12.3-14.3	8.6	9.9	11.3	10.8	10.2	8.5	7.9	7.7	7.7	9.2	9.6	9.5	9.2	5.5- 6.4 D
14.5-16.6	6.5	7.5	7.1	7.4	6.4	5.9	3.9	4.3	4.8	5.8	6.3	7.8	6.1	6.5- 7.4
16.8-18.8	9.5	9.6	9.8	9.9	8.6	6.8	4.1	4.5	6.9	7.8	9.2	9.2	8.0	7.5- 8.4 M
19.0-21.0	4.8	4.6	4.9	4.1	4.0	2.3	1.4	2.0	2.4	3.6	3.9	4.9	3.6	8.5- 9.4 E
21.3-23.3	5.3	4.0	3.1	3.0	2.7	1.4	0.5	1.1	1.2	2.4	3.2	4.3	2.7	9.5-10.4 T
23.5-25.5	1.3	1.2	0.6	0.7	0.5	0.3	0.0	0.1	0.5	0.8	0.5	1.3	0.7	10.5-11.4 E
25.7-27.7	0.7	0.7	0.3	0.2	0.3	0.1	0.0	0.0	0.1	0.2	0.4	0.6	0.3	11.5-12.4 R
28.0-30.0	1.3	0.7	0.6	0.4	0.1	0.1	0.1	0.1	0.1	0.4	0.6	0.9	0.4	12.5-13.4 S
30.2-32.2	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1	13.5-14.4 /
32.4-34.4	0.2	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	14.5-15.4 S
34.7-36.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5-16.4 E
36.9-38.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5-17.4 C
39.1-41.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5-18.4 O
41.4-43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5-19.4 N
43.6-45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5-20.4 D
45.9-56.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5-25.4
57.0-68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.5-30.4
68.2-79.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5-35.4
79.4-90.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5-40.4
>90.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	>40.4
AVERAGE														
SPEED (MPH)	11.2	10.7	11.0	11.0	10.3	9.4	8.3	8.7	9.2	10.1	10.3	11.2	10.1	
AVERAGE														
SPEED (M/SEC)	5.0	4.8	4.9	4.9	4.6	4.2	3.7	3.9	4.1	4.5	4.6	5.0	4.5	
AVERAGE														
WIND POWER	164.0	143.0	129.0	124.0	104.0	78.0	54.0	64.0	78.0	104.0	119.0	148.0	109.0	
(WATTS/M**2)														

ANEMOMETER HEIGHT = 20.0 FEET = 6.1 METERS

SOURCE: BATTELLE PACIFIC NORTHWEST LABORATORIES